

Application Serial No. 10/587,551
Reply to Office Action of December 24, 2008

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PATENT
Docket: CU-4976

Amendments to the Claims

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1-11. (cancelled)

12. (currently amended) A view angle control sheet comprising lens portions having trapezoidal shapes in section are arranged at predetermined intervals, a wedge-shaped portion between said lens portions adjacent to each other is filled with the same material as said lens portion or with a material different from said lens portion, said wedge-shaped portion has a bottom surface on a screen image source side while having a leading end on an observer side, and the following relationships hold:

$$N_x \leq N_y$$

$$-0.01 < \Delta n - \cos\theta < 0.002$$

where N_x is a refractive index of a material constituting at least a slope portion of the wedge-shaped portion, N_y is a refractive index of a material constituting said lens portion, θ is an angle formed by the slope portion of the wedge-shaped portion and a normal line of a light beam outgoing plane, and Δn is a ratio (N_x/N_y) of said refractive index N_x to said refractive index N_y , and

a sectional shape of said wedge-shape portion has a wide bottom surface on the screen image source side; and

a sectional shape of said lens portion has a wide lower base on the observer side, and the sectional shape of said lens portion has a narrow upper base on the screen image side.

13. (previously presented) A view angle control sheet according to claim 12, wherein, assuming that θ is an angle formed by the slope portion of said wedge-shaped portion and a normal line of a light beam outgoing plane, θ ranges from 3 degrees to 15 degrees.

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14. (previously presented) A view angle control sheet according to claim 12, wherein a sectional shape of said wedge-shaped portion is substantially an isosceles triangle.

15. (previously presented) A view angle control sheet according to claim 13, wherein a sectional shape of said wedge-shaped portion is substantially an isosceles triangle.

16. (previously presented) A view angle control sheet according to claim 12, wherein said slope portion has a curved sectional shape and/or a polygonal-line sectional shape such that the screen image source side differs from the observer side in an angle formed by said slope portion and an observer-side surface.

17. (previously presented) A view angle control sheet according to claim 12, wherein said wedge-shaped portion has a light-absorbing effect.

18. (previously presented) A view angle control sheet according to claim 13, wherein said wedge-shaped portion has a light-absorbing effect.

19. (previously presented) A view angle control sheet according to claim 14, wherein said wedge-shaped portion has a light-absorbing effect.

20. (previously presented) A view angle control sheet according to claim 15, wherein said wedge-shaped portion has a light-absorbing effect.

21. (previously presented) A view angle control sheet according to claim 16, wherein said wedge-shaped portion has a light-absorbing effect.

22. (previously presented) A view angle control sheet according to claim 17, wherein

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said wedge-shaped portion is filled with a material to which light-absorbing particles are added.

23. (previously presented) A view angle control sheet according to claim 18, wherein said wedge-shaped portion is filled with a material to which light-absorbing particles are added.

24. (previously presented) A view angle control sheet according to claim 19, wherein said wedge-shaped portion is filled with a material to which light-absorbing particles are added.

25. (previously presented) A view angle control sheet according to claim 20, wherein said wedge-shaped portion is filled with a material to which light-absorbing particles are added.

26. (previously presented) A view angle control sheet according to claim 21, wherein said wedge-shaped portion is filled with a material to which light-absorbing particles are added.

27. (previously presented) A view angle control sheet according to claim 22, wherein said wedge-shaped portion is formed in a wedge shape having a wide bottom surface on the screen image source side, and an average particle size of said light beam absorption particles is 1 μm or larger.

28. (previously presented) A view angle control sheet according to claim 23, wherein said wedge-shaped portion is formed in a wedge shape having a wide bottom surface on the screen image source side, and an average particle size of said light beam absorption particles is 1 μm or larger.

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29. (previously presented) A view angle control sheet according to claim 24, wherein said wedge-shaped portion is formed in a wedge shape having a wide bottom surface on the screen image source side, and an average particle size of said light beam absorption particles is 1 μm or larger.

30. (previously presented) A view angle control sheet according to claim 25, wherein said wedge-shaped portion is formed in a wedge shape having a wide bottom surface on the screen image source side, and an average particle size of said light beam absorption particles is 1 μm or larger.

31. (previously presented) A view angle control sheet according to claim 26, wherein said wedge-shaped portion is formed in a wedge shape having a wide bottom surface on the screen image source side, and an average particle size of said light beam absorption particles is 1 μm or larger.

32. (previously presented) A view angle control sheet according to claim 22, wherein an additional amount of light-absorbing particles ranges from 10 to 50 volume% in the material with which said wedge-shape portion is filled.

33. (previously presented) A view angle control sheet according to claim 27, wherein an additional amount of light-absorbing particles ranges from 10 to 50 volume% in the material with which said wedge-shape portion is filled.

34. (previously presented) A display device comprising one view angle control sheet according to claim 12 laminated on the observer side of a screen image source.

35. (previously presented) A display device comprising two view angle control

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sheets according to claim 12 laminated on the observer side of a screen image source, and the control sheets are disposed substantially orthogonal to each other.

36. (currently amended) A view angle control sheet according to claim 12, wherein at least one function of any one of ~~AR, AS, AG~~, anti-reflection, anti-static, anti-glare and a touch sensor are imparted to at least one surface side.

37. (previously presented) A display device wherein a view angle control sheet according to claim 12 is bonded.